

A guide to applying theory of change

2021 Australian Infrastructure Plan

About Infrastructure Australia

Infrastructure Australia is the nation's independent infrastructure advisor. We provide research and advice to governments, industry and the community on the infrastructure investments and reforms needed to deliver better infrastructure for all Australians.

We maintain the [Infrastructure Priority List](#) to ensure that public funds are directed towards projects that will deliver the best outcomes for our growing communities.

Our rigorous and independent analysis identifies infrastructure needs and opportunities, to ensure that our infrastructure funds are spent where they are needed most.

We also develop research and advice on the broader opportunities for infrastructure reform and publish new and interactive data to support better infrastructure decision-making.

Our key policy publications include:

- the [Australian Infrastructure Audit](#), which presents a forward-looking view of Australia's infrastructure needs
- the [Australian Infrastructure Plan](#), which sets out policy responses to these infrastructure needs
- the infrastructure [Reform Series](#), which advises government, industry and communities how best to implement these policy responses.

Working closely and collaboratively with stakeholders across government and the infrastructure sector, our focus is on raising the quality of infrastructure planning and delivery throughout Australia.

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About Social Ventures Australia

Social Ventures Australia (SVA) works with innovative partners to invest in social change.

SVA Consulting is a specialist consulting practice that partners with social purpose organisations to strengthen their ability to address social issues and achieve results. We support leaders to make hard decisions, galvanise teams to sustain success and share insights with the social sector.

We work on society's most challenging issues including health, disability, housing, employment, education and First Nations disadvantage. We measure our success by the results our clients achieve. Our people are passionate about the work they do and the opportunity to create a better Australia.

Professional Disclosure

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A narrative for policy reform to improve outcomes in infrastructure services for users

This document offers practical guidance on using theory of change – an approach to identifying the actions required to deliver outcomes and setting out the interdependencies between opportunity/problem identification and responding reforms.

Better policy and deliberate reform support effective, transformational reform to improve infrastructure service outcomes. The infrastructure sector supports the provision of services to improve the quality of life for the community through the delivery of infrastructure services. The theory of change framework embeds this clear vision for the sector within reform and identifies the incremental actions that will facilitate progress to these outcomes.

This approach helps to focus infrastructure policy on the things that will ultimately make a difference to improving quality of life and national productivity.

The purpose of this document is to support the 2021 Australian Infrastructure Plan, and the infrastructure reform dialogue, by introducing the theory of change logic model as a tool to plan and monitor policy and reforms. The theory of change framework can complement other policy tools, such as multi-criteria analysis, which support comparison of reforms.

Effective change requires a focus on the needs of the people and communities using infrastructure and the changes that will improve access to and quality of infrastructure services and reduce their cost. Infrastructure also provides a platform to support sustainability outcomes for the community. By focusing on the outcomes that will change because of an activity or action, and measuring that change, everyone is able to see the tangible difference that the policy and reforms can make to people's lives.

This document serves as a resource for the development of the *2021 Australian Infrastructure Plan*. However, the theory of change approach in this document is a generic tool which can be used for any policy process and Infrastructure Australia hopes that this document will assist others in their journey to deliver better user and community outcomes.

"Infrastructure Australia, the nation's independent infrastructure advisor, is tasked with improving the quality of Australia's infrastructure to deliver better community outcomes now and into the future."

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Infrastructure Australia:
planning for long-term change

1

The 2021 Australian Infrastructure Plan champions community sustainability and user-centric services

The *2021 Australian Infrastructure Plan (The 2021 Plan)* sets out policy responses to strengthen community sustainability across four lenses of productivity, environment, governance and quality of life, as well as user outcomes of access, quality and affordability of infrastructure services.

It proposes reforms that build on:


- the 180 opportunities and challenges identified in the *2019 Australian Infrastructure Audit (The 2019 Audit)*;
- submissions and other engagement on the findings of the *2019 Audit*;
- the impacts of COVID-19 as defined by *Infrastructure Beyond COVID-19*, the 2019-20 bushfire season and impacts from recent droughts and floods.
- progress on the recommendations of the *2016 Australian Infrastructure Plan*;
- the contents of the *Infrastructure Priority List*; and,
- the Reform Series reports undertaken since the *2016 Australian Infrastructure Plan*.

Infrastructure Australia has applied a theory of change framework to standardise the approach to identifying activities that bridge the gap from opportunities and challenges to outcomes that benefit Australians. The framework sets out how to map activities and interdependencies between where we are today to where we would like to be.

Using this framework and other tools, the *2021 Plan* makes the case for action on the critical reforms for Australia's infrastructure sector – transport, energy, water, telecommunications/digital, social and waste. It provides evidence for changes that will shift the dial on Australia's infrastructure needs for the next 15 years.

Needs assessment


Identification of challenges and opportunities



2019 Australian Infrastructure Audit
Identification of 180 challenges and opportunities



Infrastructure beyond COVID-19
Exploration of 5 trends, 6 challenges and 6 opportunities arising during the COVID-19 pandemic



Progress since the 2016 Australian Infrastructure Plan
Monitoring progress and best practice adoption of 78 recommendations from the 2016 Australian Infrastructure Plan

2021 Australian Infrastructure Plan suite

Identification of long-term ambition for the Australian infrastructure sector and actions



2021 Australian Infrastructure Plan
Consolidated reform vision, supporting actions and outcomes across 6 infrastructure sectors and 3 policy focus areas



Detailed Plans
Expanded evidence base to support reform across the 6 sectors and 3 policy focus areas of the 2021 Australian Infrastructure Plan




2021 Reform Priority List
Assessment of the expected impacts of the reforms proposed in the 2021 Australian Infrastructure Plan using multi-criteria analysis




2021 Implementation Pathway
Summary of reform by actor, their role and timeframe

Implementation


Supporting the adoption of best-practice reform



Regional Strengths and Infrastructure Gaps
Defining regional identity and localising 2019 Australian Infrastructure Audit Challenges and Opportunities



A Pathway to Infrastructure Resilience
Exploring both opportunities for systemic change and providing guidance for asset owners and operators in the short term



Deliverability: A Roadmap for Infrastructure
Working collaboratively across government and with industry to provide a detailed reform roadmap to improve the productivity, innovation and deliverability of infrastructure

What is theory of change?

2

What is theory of change?

'Theory of change' is an outcomes-based approach which applies critical thinking to the design, implementation and evaluation of initiatives and programs intended to support change in their contexts.

Infrastructure Australia is using theory of change as an approach to help focus on outcomes while also seeing the interdependencies between actions in delivering those outcomes.

An outcomes-focussed approach helps to guide decision making and enables mapping of a reform pathway and metrics for monitoring performance. It sets the framework for reforms that can be tested, challenged and refined regularly as Infrastructure Australia has an commitment to report on progress on the *2021 Australian Infrastructure Plan*.

Infrastructure reforms to how we manage and deliver services can enable real change for communities, be it through improved access to transport, water, energy, waste services, telecommunications/digital and social infrastructure, as well as associated economic, environmental, social and governance outcomes.

Infrastructure Australia's role in driving change can be enhanced by a focus on the outcomes that we are trying to achieve – to answer "Why should governments and industry do this?" Moreover, effective change necessitates a focus on infrastructure users and communities, and the changes that will improve quality of life – not just the infrastructure that needs to be delivered.

Theory of change describes **how and why a desired change is expected to happen** in a particular context

- It is focused on **mapping out** or "filling in" what has been described as **the "missing middle"** between what a change initiative does (its activities) and how these lead to desired goals being achieved
- It does this by **identifying the desired long-term goals and then works back** from these to identify all the conditions (outcomes) that must be in place (and how these relate to one another causally) for the goals to occur.



Communicating what you do and why

...so you can explain to internal and external stakeholders why your particular investment exists and how its activities create change



Measurement and evaluation

...so you know what outcomes to measure and why

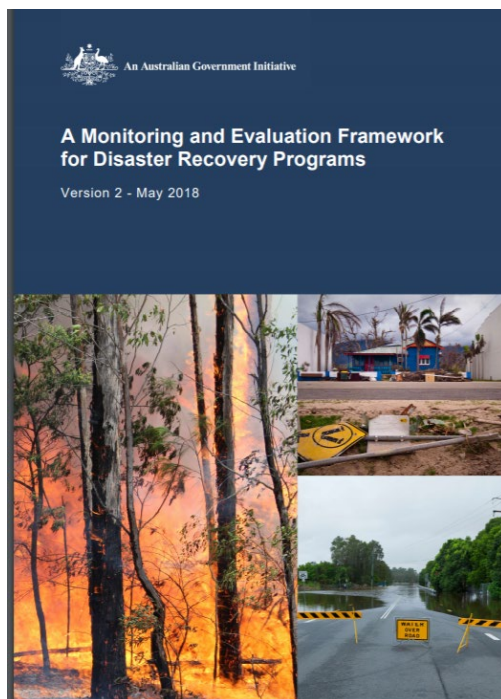


Strategy and planning

...so you can see on a page what change your particular investment intends to create and how

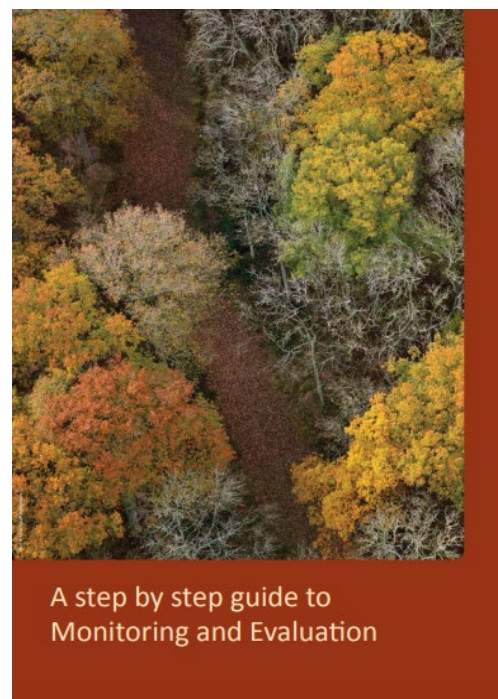
Theory of change is emerging in infrastructure planning and investment decisions across sectors and government agencies

For disaster recovery, infrastructure and built environment recovery outcomes need to be prioritised using a theory of change approach.



Source: [Australia and New Zealand School of Government \(ANZSOG\), 2018](#)

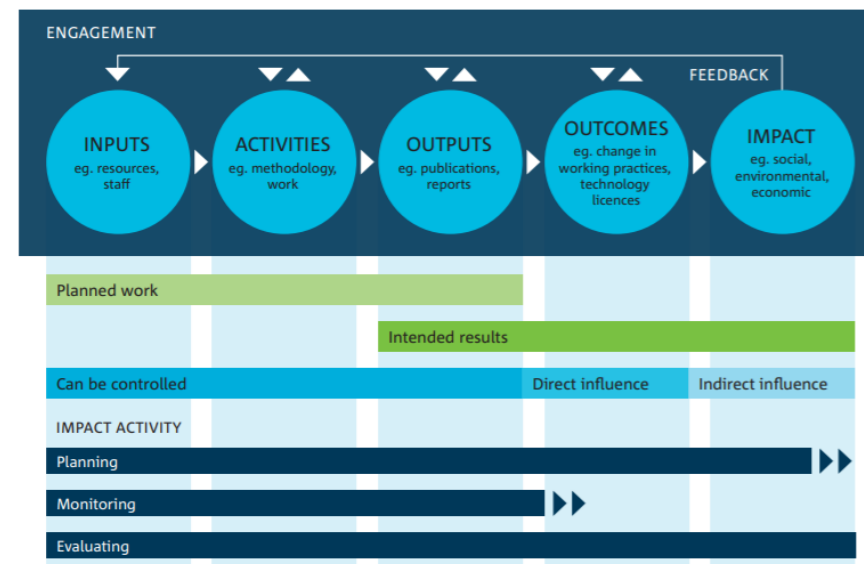
Understanding the change pathway can be used to help groups working on innovative community led approaches to climate change and energy solutions.



Source: Transition Network, [Monitoring and Evaluation Guide](#), accessed 2020

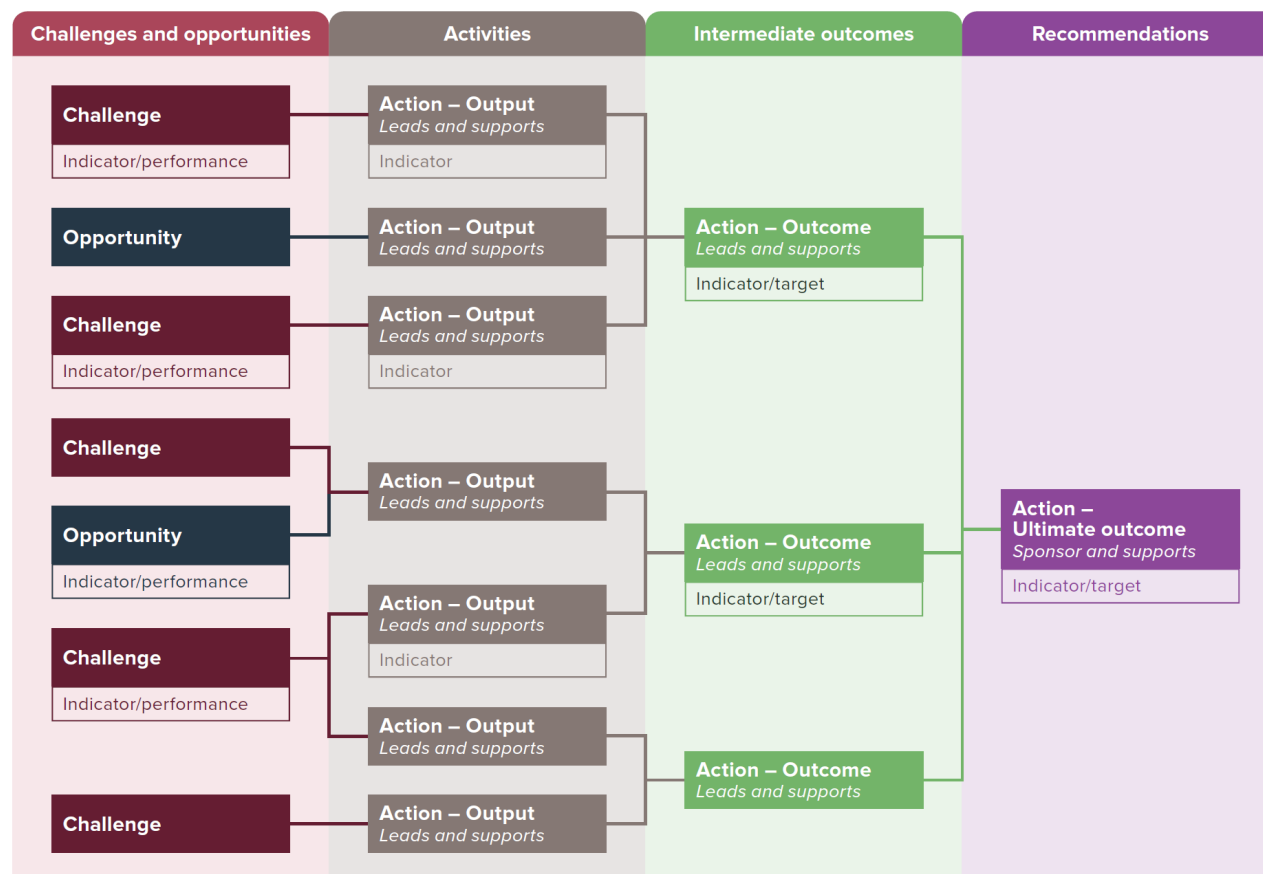
Government agencies, such as the CSIRO, have developed impact frameworks using theory of change as the foundation, to inform its activities and investments

FIGURE 1: CSIRO'S IMPACT FRAMEWORK



Source: CSIRO, [Ensuring we deliver impact](#), accessed 2020

Defining the pathways to change



Infrastructure Australia has applied a theory of change framework to bridge the gap between the opportunities and challenges identified in the *2019 Audit and Infrastructure beyond COVID-19* and outcomes that would improve quality of life for Australians.

The figure to the left illustrates the *2021 Plan's* theory of change framework. This sets out how the recommendations will be supported by the activities and intermediate outcomes that contribute to that change.

This step-by-step representation of the pathway to realise the vision of the *2021 Plan* of higher quality of life and increase national productivity. The theory of change provides a narrative for structuring policy reform to improve outcomes in infrastructure service delivery to enable this change.

In addition, the forthcoming detailed plans for each of the six infrastructure sectors and three cross-sector themes include an illustrated theory of change for each recommendation. These demonstrate the logical flow of activities that respond to current issues and lead to a pathway of outcomes at a level of detail that is useful for making policy decisions.

These plans should be supported by more detailed planning by the proposed change agents working towards implementing the recommendations.

Why is theory of change important
for infrastructure planning?

3

Like many organisations and government agencies, Infrastructure Australia is adopting an outcomes-focused approach. Using theory of change as a planning tool enables Infrastructure Australia to apply a structured approach for developing policy advice to government and is an opportunity to ensure that we effectively contribute to achieving long-term outcomes. As a systematic way to understand and document complex changes, it informs and complements multi criteria assessment and cost-benefit analysis, which are assessment tools.



Theory of change allows reform recommendations to:

- **Have impact** – an outcomes-focused approach encourages clarity about the impact you want to have, and then test, learn and iterate to make sure reforms are effective. This test, learn and iterate process can improve design and delivery, foster collaboration to achieve shared goals, and drive innovation, that ultimately leads to better outcomes.
- **Focus on infrastructure users and the community** – an outcomes-focused approach puts infrastructure user and community needs at the centre of design and delivery. When the focus is on the user and the community, Infrastructure Australia is able to work together with stakeholders to empower them to be agents of change and underpin improved outcomes for families and their communities.
- **Support innovation** – by building evidence about what works and why, theory of change supports finding new ways of addressing challenging problems and being more responsive to dynamic contexts. Using evidence to tailor to specific needs whilst also taking into account other interdependencies provides for pragmatic reforms.
- **Focus on what matters**– by providing a conceptual ‘backbone’ that links issues with strategic thinking. Having greater clarity of the outcome that reform work leads to can inspire everyone to engage in the work and try, test and iterate to find the best ways to create that meaningful impact while dealing with the complex challenges of infrastructure service delivery.
- **Support transparency and debate** – reforms that can demonstrate meaningful and lasting impact are more likely to be adopted. An outcomes-focused approach provides better information to all parties.
- **Embed collaboration** – both individual and community needs often span a mix of economic, social, environmental and governance objectives. The quality of infrastructure services, including better overall outcomes, can be achieved through collaboration and understanding interdependencies.

How to develop a theory of change

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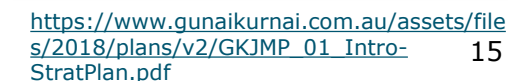
The process of developing a theory of change should always start by being clear about the **scope**. To do this, you should answer three questions:

- **Audience:** who is it for? Who needs to act to create change?
- **Purpose:** why are we doing it?
- **Rigour:** how far do we need to go to get a meaningful answer?

Answering these questions will help you to be clear about:

- **Timeframe:** the timeframe your theory of change applies to
- **Development:** who you need to involve in the development of the reform
- **Refinement:** how often you need to refine the theory of change
- **Measurement:** how to define progress and ensure success
- **Presentation:** what format the theory of change needs to be presented in

The representations to the right are some examples of how a theory of change can be represented on a single page.





Issue: What is the issue you are responding to?

Define the issue

It is important to clearly define the issue you are trying to address even if you have been working on it for many years.

Example: All Australians do not have access to clean water which creates a barrier to economic, social and environmental development

Key questions to ask

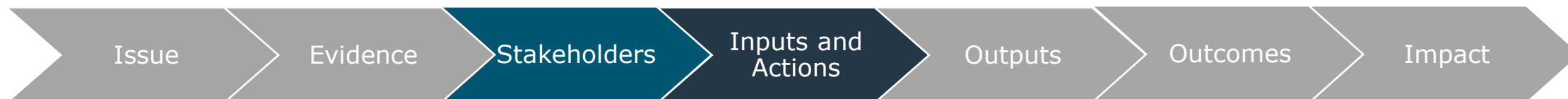
- How has it been dealt with successfully elsewhere, including the use of published, peer reviewed literature? Gathering evidence of what has worked and, importantly, what has not worked, can help to refine your thinking about how change is likely to happen because of a reform.
- What has happened with similar reforms in the past, and what changes have been happening as a consequence? You might find other programs that are like yours that have identified outcomes that can inform your decision-making.
- Do we understand the people our reforms will affect and what are their goals and aspirations that your reforms may be able to support them with? The best source of information about the issue you are addressing, and the changes you should be trying to achieve for people are the people themselves.
- What does the evidence say is the best way to respond to the issue?
- Is published research or systematic reviews of literature on your issue available?

Evidence: What do we know?

Collect the evidence

Evidence can help to inform initial planning and design. It can also be used in consultation with stakeholders and inform co-design activities.

Example: Australia does not meet the United Nations Sustainable Development Goal 6: safe and affordable drinking water for all



Stakeholders: who experiences the change?

Define the stakeholders

You should be able to clearly identify who your stakeholders are. This includes beneficiaries of the reform as well as government or other organisations you may work with to address the issue.

Example: Australian people, Australian Government, State and territory governments, Local Councils, Community Advisory Groups including Traditional Owners

Key questions to ask

- Who has a material interest in this reform? Know where to draw the line
- Who may influence this reform?
- Who will the reform impact? Benefit / adverse
- Who will the process impact?

Actions: what will you do? Inputs: what resources do you need?

Define the Actions

Activities are the actions you take to respond to the identified issue

Example: Provide stand-alone water treatment facilities

A logic model can articulate the change that you want to see for just one action or for a grouping of actions. You can choose how broad or narrow you want to go depending on the level at which you want to be able to observe change. For example, providing stand alone water treatment facilities for remote communities is an overarching action that consists of many smaller action, and providing a testing program is a narrower action.

Define the inputs

At this point, it is also important to record the inputs you will use to deliver the activity. Inputs are defined as resources that are used by an action such as money, people, time, facilities and equipment. In many contexts, the inputs are simply the cash investments required to deliver the action.



Outputs: What will happen to people who do those activities?

Collect the evidence

Outputs are the things that happen when you run an action, but not necessarily changes for people

Example: 500,000 people living in remote and regional areas of Australia will have a reliable water supply that meets health standards under the Australian Drinking Water Guidelines

Key points

- When describing outputs, you do not need to describe the change you hope to see as a consequence of the activity. Those changes are the outcomes
- Outputs are the direct deliverables of a reform or program such as products created or delivered, the number of people served, and the activities and services carried out.

Difference between outputs and outcomes

Outcomes are the changes that happen as a consequence of outputs. Outcomes may be positive, negative or neutral; intended or unintended. Outcomes can occur for individuals, groups, families, organisations, systems, or communities during or after an activity. Changes can include attitudes, values, behaviours or conditions.

Example: People living in remote and regional areas of Australia experience a lower occurrence of hygiene related diseases



Action

Open new hospital in regional second city



Output

500 patients receive treatment at new regional hospital



Outcome

Residents of regional second city experience better health and well being



Outcomes: What will be the short, medium and long term changes for stakeholders?

Identify the outcomes

It is important to clearly articulate outcomes that a reform aims to achieve - the changes that happen for stakeholders. Remember that the changes that happen because of your actions are the outcomes. They are the short, medium and long-term changes for stakeholders. For example, an action to **investigate appropriate wastewater treatment facilities for regional and remote communities** is expected to lead to the following outcomes:

What will be the short-term changes in the stakeholders' lives?

Example: We have a clear understanding of the quality of wastewater services in remote and regional Australia.

What will be the medium-term changes in the stakeholders' lives?

Example: Wastewater services and treatment in remote and regional communities usually meet health and environmental standards.

What will be the long-term changes in the stakeholders' lives?

Example: Regardless of where you live, the management of wastewater reliably meets health and environmental standards.

There are three principles to keep in mind when identifying outcomes:

1. Consequences don't happen all at once. The immediate consequences may be termed the 'outputs' or 'direct deliverables' of the investment and activities; these are generally what workers are directly involved in securing. The short, medium and longer-term consequences can be termed 'outcomes'.
2. Consequences can be positive or negative, or both. Being open to identifying both positive and negative consequences is crucial to ensuring the integrity of the resulting theory of change.
3. Be exhaustive. It is important to identify as many consequences that arise from the activities and investment as possible, including those which are indirect or seemingly tangential. Once you have created an exhaustive list, you can identify the core outcomes, without which your stakeholders will not achieve long term impact. Those core outcomes are your priority outcomes.

Issue

Evidence

Stakeholders

Inputs and
Actions

Outputs

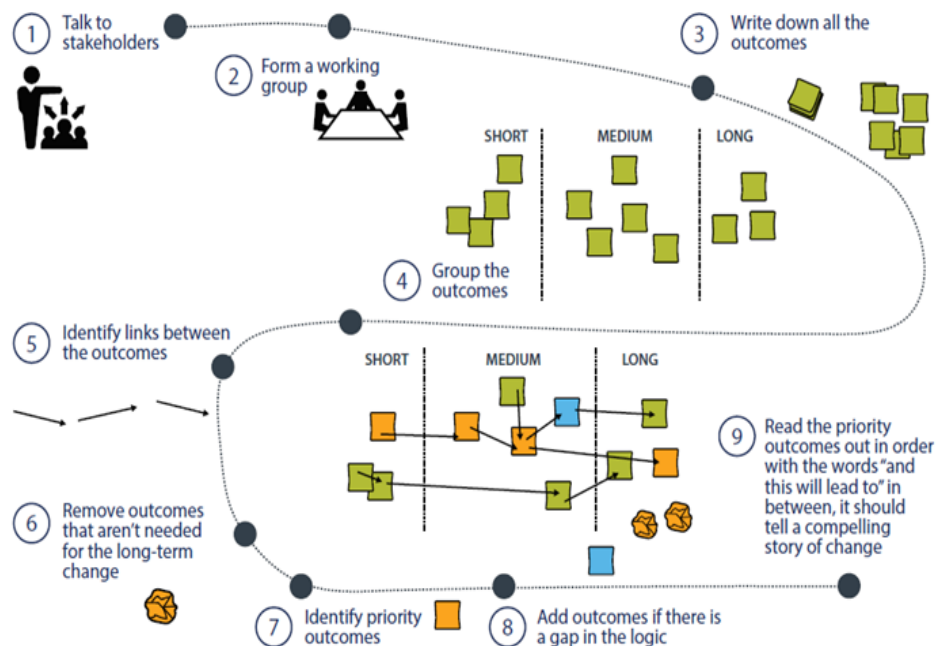
Outcomes

Impact

Outcomes: identifying, grouping and prioritising

With these three principles in mind, we suggest holding a logic model workshop to identify, group and order your outcomes.

Simple Logic Model workshop guide:



Impact: what is the vision?

Define the impact

The impact is often the inverse of the issue you are trying to address, but might be informed by the type of change that stakeholders say they want to achieve.

Example: All Australians have access to clean water to enable economic, social, cultural and environmental development

Key questions

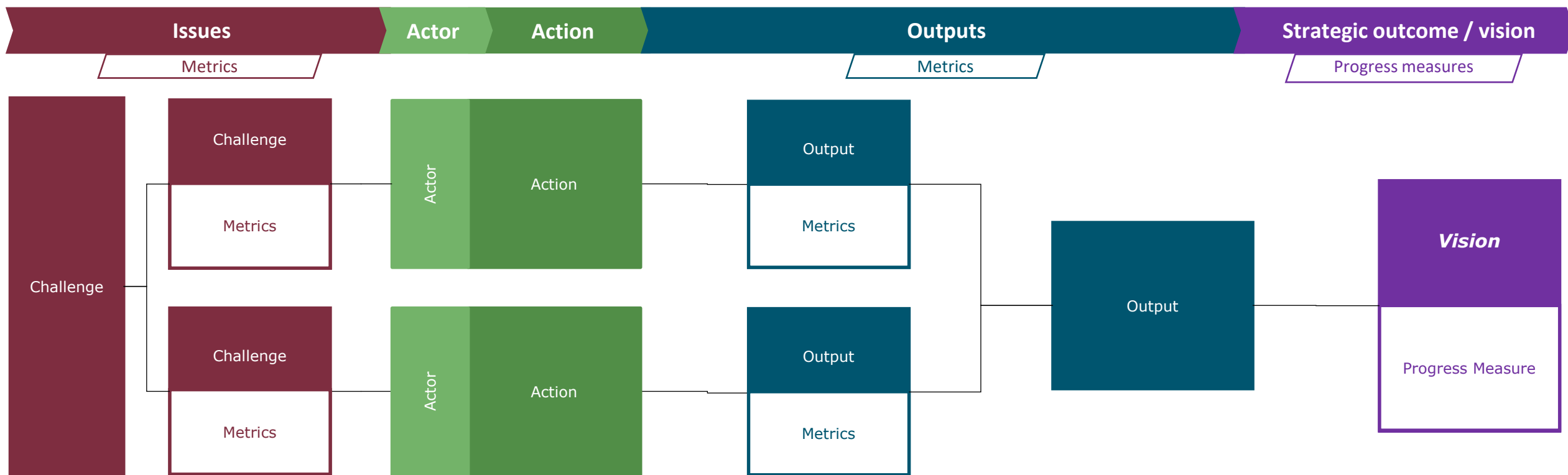
- What will it look like when the social issue has been addressed?
- What is the long-term change you want to see happen for people?

Challenge

At this stage it is useful to work backwards from your impact and challenge yourselves by considering whether you could deliver your activities differently, or deliver different actions, to achieve your impact more effectively.

Template

5



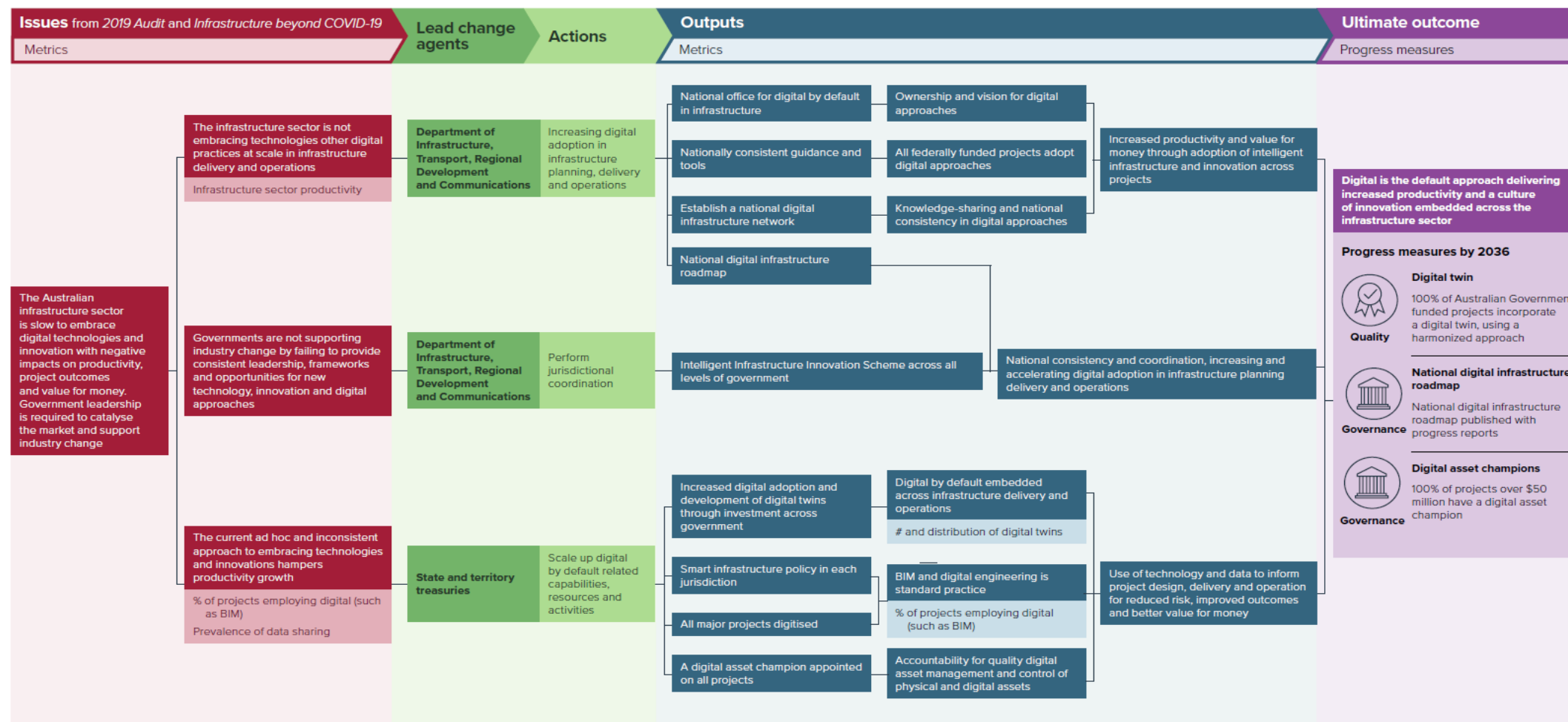
Applied example

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Example theory of change: Recommendation 3.3 – Industry Productivity and Innovation Digital by Default

Increase productivity and embed a culture of innovation in the infrastructure sector by adopting an evidence-based digital by default approach to infrastructure planning, delivery and operations.

Proposed sponsor: Department of Infrastructure, Transport, Regional Development and Communications



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